

# **International Conference on Computer Science and Engineering (IC2SE 2019)**

**Industrial Revolution 4.0 Opportunities &  
Challenges**

Journal of Physics: Conference Series Volume 1339

Padang, Indonesia  
26 - 27 April 2019

Part 1 of 2

## **Editors:**

**Robbi Rahim  
Robby Dharma**

**Billy Hendrik  
Abulwafa Muhammad**

ISBN: 978-1-7138-1047-6  
ISSN: 1742-6588

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

This work is licensed under a Creative Commons Attribution 3.0 International Licence.  
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2020)

For permission requests, please contact the Institute of Physics  
at the address below.

Institute of Physics  
Dirac House, Temple Back  
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481  
Fax: 44 1 17 920 0979

[techtracking@iop.org](mailto:techtracking@iop.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## PART 1

### CIVIL ENGINEERING

<b>RISK ASSESTMENT OF HOUSING RECONSTRUCTION PROJECT COMMUNITY-BASED CONSTRUCTION AFTER THE EARTHQUAKE</b> .....	1
<i>Wendi Boy, Rafki Imani, Mayozi Chari, Widiawati Purba, Jihan Melasari</i>	
<b>PREDICTION OF CANAL EROSION ON TIDAL SWAMP DELTA TELANG I, BANYUASIN REGENCY, SOUTH SUMATRA</b> .....	11
<i>Achmad Syarifudin, Henggar Risa Destania, Yunan Hamdani</i>	
<b>ASSESSMENT FOR SEISMIC ACTIVITIES IN PESISIR SELATAN WEST SUMATRA IN 2018</b> .....	18
<i>R Imani, W Boy, U Dewi, A Sari, W Purba, M Chairi, J Melasari</i>	
<b>SHALLOW WELL WATER SALINITY VIEWED FROM DISTANCE OF WELL TO COASTLINE AND GROUND WATER LEVEL ELEVATION IN PURUS PADANG VILLAGE</b> .....	24
<i>M Chairi, W Purba, W Boy, R Imani, J Melasari</i>	

### COMPUTER SCIENCE AND COMPUTER ENGINEERING

<b>BANDIT ALGORITHMS IN INFORMATION RETRIEVAL EVALUATION AND RANKING</b> .....	35
<i>Sinyinda Muwanei, Hoo Wai Lam, Sri Devi Ravana, Douglas Kunda</i>	
<b>A REVIEW STUDY: THE EFFECT OF FACE AGING AT ESTIMATING AGE AND FACE RECOGNITION</b> .....	42
<i>Rasha Ragheb Atallah, Amirrudin Kamsin, Maizatul Akmar Ismail</i>	
<b>COMBINATION OF COLUMNAR TRANSPOSITION CIPHER CAESAR CIPHER AND LEMPEL ZIV WELCH ALGORITHM IN IMAGE SECURITY AND COMPRESSION</b> .....	50
<i>Dian Rachmawati, Sri Melvani Hardi, Raju Partogi Pasaribu</i>	
<b>ELECTRONIC HEALTH CLOUD AS SERVICE TO IMPROVE COLLABORATION IN HEALTHCARE ORGANIZATIONS</b> .....	56
<i>Shady Gomaa Abdulaziz, Norizan Mohd Yasin, Zeinab AlGamal, Asmaa Hateem, Kalaimagal Ramakrishnan</i>	
<b>EXPERT SYSTEM FOR DISEASE DIAGNOSIS IN COCOA PLANT USING ANDROID-BASED FORWARD CHAINING METHOD</b> .....	62
<i>Vicky Ariandi, Hezy Kurnia, Heriyanto, Hilda Marry</i>	
<b>ENHANCEMENT OF OTP STREAM CIPHER ALGORITHM BASED ON BIT SEPARATION</b> .....	69
<i>Arisman, Mahyuddin K M Nasution, Syahril Efendi</i>	
<b>TRANSPARENT ENCRYPTION TECHNIQUE FOR TRUSTED COMPUTING</b> .....	76
<i>Gushelmi, Abdullah Mohd Zin</i>	
<b>SMART IRRIGATION SYSTEM BASED ON INTERNET OF THINGS (IOT)</b> .....	80
<i>Nurulisma Ismail, Sheegillshah Rajendran, Wong Chee Tak, Tham Ker Xin, Nur Shazatushima Shahril Anuar, Fadhil Aiman Zakaria, Yahya Mohammed Salleh Al Quhaif, Hussein Amer M. Hasan Karakhan, Hasliza A. Rahim</i>	
<b>AUTOMATIC SYSTEM TO FISH FEEDER AND WATER TURBIDITY DETECTOR USING ARDUINO MEGA</b> .....	87
<i>H Hendri, S Enggari, Mardison, M R Putra, L N Rani</i>	
<b>DECISION SUPPORT SYSTEM IN DETERMINING STRUCTURAL POSITION MUTATIONS USING SIMPLE ADDITIVE WEIGHTING (SAW) METHOD</b> .....	97
<i>Aulia Fitrul Hadi, Randy Permana, Havid Syafwan</i>	
<b>A COMPARATIVE ANALYSIS OF DETECTION MECHANISMS FOR EMOTION DETECTION</b> .....	103
<i>Vimala Balakrishnan, Marian Cynthia Martin, Wandeeep Kaur, Amir Javed</i>	
<b>PREDICTION OF MALAYSIAN STOCK MARKET MOVEMENT USING SENTIMENT ANALYSIS</b> .....	110
<i>Low Cheng Kuan, Maizatul Akmar Ismail, Tasnim M. A. Zayet, Shuhaida Mohamed Shuhidan</i>	
<b>DESIGN OF BICYCLE'S SPEED MEASUREMENT SYSTEM USING HALL EFFECT SENSOR</b> .....	116
<i>Ratna Aisuwarya, Muhammad Azmi Riyan, Rahmi Eka Putri</i>	
<b>EXPLORING TOPIC DIFFICULTY IN INFORMATION RETRIEVAL SYSTEMS EVALUATION</b> .....	124
<i>Wei Ting Pang, Prabha Rajagopal, Mengjia Wang, Shuxiang Zhang, Sri Devi Ravana</i>	

<b>EXPERT SYSTEM APPLICATION FOR DIAGNOSING OF BIPOLAR DISORDER WITH CERTAINTY FACTOR METHOD BASED ON WEB AND ANDROID .....</b>	<b>131</b>
<i>A Muhammad, B Hendrik, R Iswara</i>	
<b>THE KINDNESS BEHAVIOR MANAGEMENT IN KINDNESS SERVICE APPLICATION USING TREE STRUCTURE .....</b>	<b>143</b>
<i>Luxfy Roya Azmi, Lukito Edi Nugroho, Adistya Erna Permatasari</i>	
<b>TECHNOLOGY ACCEPTANCE AMONG OLDER ADULTS WITH MILD COGNITIVE IMPAIRMENT.....</b>	<b>150</b>
<i>Nita Rosa Damayanti, Nazlena Mohamad Ali, Ely Salwana Mat Surin</i>	
<b>SUPPLIER SELECTION BY USING ANALYTICAL HIERARCHY PROCESS (AHP) AND TECHNIQUES FOR ORDER PREFERENCE METHODS WITH SIMILARITIES TO IDEAL SOLUTIONS (TOPSIS) .....</b>	<b>157</b>
<i>I Siregar</i>	
<b>APPLICATION OF THEORY OF CONSTRAINTS IN BOTTLENECK WORK STATIONS OPTIMIZATION.....</b>	<b>162</b>
<i>I Siregar</i>	
<b>IDENTIFICATION OF VARIABLES IN PREDICTING TRENDS IN SOCIAL ENTREPRENEURSHIP .....</b>	<b>166</b>
<i>N A Zulkefly, N A Ghani, W Alquliti</i>	
<b>INTERNET OF THINGS IN MONITORING AND NOTIFICATION OF INDUSTRIAL SECURITY SYSTEMS.....</b>	<b>173</b>
<i>Alkhairunas Riyuska, Julius Santony, Sumijan</i>	
<b>MULTIPLE THRESHOLDING METHODS FOR EXTRACTING &amp; MEASURING HUMAN BRAIN AND 3D RECONSTRUCTION .....</b>	<b>179</b>
<i>Sumijan, Pradani Ayu Widya Purnama, Syafri Arlis</i>	
<b>DESIGN CHIPLESS TEXTILE TAG FOR RFID APPLICATION.....</b>	<b>196</b>
<i>Mirza Anuar, Lee Yeng Seng, M. S. Shakhirul, F.H. Wee, Hong Seng Gan, Muzammil Jusoh, Thennarasan Sabapathy, M.N. Osman</i>	
<b>SOCIAL ENTREPRENEURSHIP LEARNING MODEL IN HIGHER EDUCATION USING SOCIAL NETWORK ANALYSIS.....</b>	<b>204</b>
<i>Muhammad Hamirul Hamizan Roslan, Suraya Hamid, Mohamad Taha Ijab, Sarah Bukhari</i>	
<b>APPLICATION OF AHP ANALYSIS TO INCREASE EMPLOYEE CAREER PATHS IN DECISION SUPPORT SYSTEMS.....</b>	<b>215</b>
<i>Julius Santony, Faisal Amir, Sumijan, Rice Novita</i>	
<b>EXPERT SYSTEMS DIAGNOSING OF BANANA PESTS AND DISEASES USE CASE-BASED REASONING METHOD WITH ANDROID .....</b>	<b>222</b>
<i>Hezy Kurnia, Vicky Ariandi, Heriyanto, Yesri Elva</i>	
<b>MODEL DEVELOPMENT MEASUREMENT OF INTERESTS BASED ON EXPERT SYSTEM.....</b>	<b>232</b>
<i>Erdisna, Ganefri, Ridwan, Rice Novita, Wanayumini</i>	
<b>ANALYSIS OF PRIORITIES QUEUING MODEL (N-P) SYSTEM WITH MULTIPLE CHANNEL MULTIPLE PHASE AND SIMPLE ADDITIVE WEIGHTING .....</b>	<b>242</b>
<i>Herman Putra Rajagukguk, Muhammad Zarlis, Sutarman</i>	
<b>INTERACTIVE MAP MODEL OF FLAT DESIGN FOR ISTANO BASA PAGARUYUNG TOURISM DEVELOPMENT .....</b>	<b>248</b>
<i>T Wiraseptya, R Imani, M Afdhal, H Yanto</i>	
<b>BREAST CANCER CLASSIFICATION USING DIGITAL BIOPSY HISTOPATHOLOGY IMAGES THROUGH TRANSFER LEARNING.....</b>	<b>256</b>
<i>Ghulam Murtaza, Liyana Shuib, Ainuddin Wahid Abdul Wahab, Ghulam Mujtaba, Ghulam Mujtaba, Ghulam Raza, Nor Aniza Azmi</i>	
<b>STRENGTHENING CHARACTER EDUCATION WITH THE IMPLEMENTATION OF MACHINE LEARNING IN THE MILLENNIAL ERA INDUSTRIAL REVOLUTION 4.0.....</b>	<b>267</b>
<i>Ulya Ilhami Arsyah, Rahmatul Husna Arsyah, Mutiana Pratiwi, Novia Lestari</i>	
<b>ONLINE MANAGEMENT SYSTEM OF UPI FKIP YPTK PADANG EDUCATION FIELD PRACTICE .....</b>	<b>281</b>
<i>Astri Indah Juwita, Muhammad Ikhlas</i>	
<b>DETERMINATION OF THE SHORTEST ROUTE TOWARDS THE TOURIST DESTINATION AREA USING THE ANT ALGORITHM.....</b>	<b>290</b>
<i>Ni Luh Wiwik Sri Rahayu Ginantra, T Taufiqurrahman, Gita Widi Bhawika, Ida Bagus Ary Indra Iswara, Anjar Wanto</i>	

<b>DECISION SUPPORT SYSTEM FOR MAPPING TYPES OF TIMBER AND NUMBER OF PRODUCTS FOR FURNITURE HANDLING IN THE MAIN WORK SERVICE USING AHP METHOD FOR INCREASING PRODUCTION PROFITS .....</b>	<b>297</b>
<i>Firdaus, Ritna Wahyuni, Ade Saputra, Novia Yolanda, Ritna Wahyuni, Usman, Mondra Neldi</i>	
<b>PREDICTING GDP OF INDONESIA USING K-NEAREST NEIGHBOUR REGRESSION .....</b>	<b>309</b>
<i>Bagus Priambodo, Sarwati Rahayu, Al Hamidy Hazidar, Emil Naf'an, Mardhiah masril, Inge Handriani, Zico Pratama Putra, Asama Kudr Nseaf, Deni Setiawan, Yuwan Jumaryadi</i>	
<b>DESIGN A DRINK MAKING TOOL AUTOMATIC MILK COFFEE BASED ARDUINO R3.....</b>	<b>316</b>
<i>Nofriadi, Herman Saputra, Juna Eska, Adi Prijuna Lubis, Nuriadi Manurung</i>	
<b>THE APPLICATION OF DATA MINING IN DETERMINING PATTERNS OF INTEREST OF HIGH SCHOOL GRADUATES.....</b>	<b>322</b>
<i>Dedy Hartama, Agus Perdana Windarto, Anjar Wanto</i>	
<b>SMART IOT FLOOD MONITORING SYSTEM .....</b>	<b>328</b>
<i>Shahirah Binti Zahir, Phaklen Ehkan, Thennarasan Sabapathy, Muzammil Jusoh, Mohd Nasrun Osman, Mohd Najib Yasin, Yasmin Abdul Wahab, N.A.M Hambali, N. Ali, A.S. Bakhit, F. Husin, M.K.Md. Kamil, R. Jamaludin</i>	
<b>AN IOT BASED SMART PARKING SYSTEM.....</b>	<b>335</b>
<i>Mehala Chandran, Nur Fadila Mahrom, Thennarasan Sabapathy, Muzammil Jusoh, Mohd Nasrun Osman, Mohd Najib Yasin, N.A.M. Hambali, R. Jamaluddin, N. Ali, Yasmin Abdul Wahab</i>	
<b>EXPERT SYSTEM TO DIAGNOSE CHILD DEVELOPMENT GROWTH DISORDERS WITH FORWARD CHAINING METHOD.....</b>	<b>343</b>
<i>A P Gusman, H Hendri</i>	
<b>DESIGN OF EXPERT SYSTEM FOR DIAGNOSIS DAMAGE COMPUTER HARDWARE.....</b>	<b>351</b>
<i>Retno Devita, Eva Rianti, Sri Rahmawati</i>	
<b>EXPERT SYSTEM AND RULE-BASED KNOWLEDGE BASED IN ANALYZING VITAMIN DEFICIENCY IN THE HUMAN BODY.....</b>	<b>359</b>
<i>Ruri Hartika Zain, Elmi Rahmawati</i>	
<b>ANALYSIS OF THE FACTORS AFFECTING THE QUALITY OF PALM OIL USING THE ANALYTICAL HIERARCHY PROCESS METHOD.....</b>	<b>372</b>
<i>Nugraha Rahmansyah, Shary Armonitha Lusia, Rima Liana Gema</i>	
<b>FUZZY LOGIC APPLICATIONS TO PREDICT TOTAL PRODUCTION OF PKO (PALM KERNEL OIL).....</b>	<b>379</b>
<i>Devia Kartika, Mutiana Pratiwi, Rima Liana Gema</i>	
<b>A COMPACT MIMO PLANAR INVERTED-F ANTENNA .....</b>	<b>389</b>
<i>Najwa, Mohamed Nasrun Osman, Muzammil Jusoh, Thennarasan Sabapathy, Samir Al-Bawri, M. M. Azizan, Tarmizi Ali</i>	
<b>UNIVERSITY STUDENT SATISFACTION ANALYSIS ON ACADEMIC SERVICES BY USING DECISION TREE C4.5 ALGORITHM (CASE STUDY : UNIVERSITAS PUTRA INDONESIA "YPTK" PADANG).....</b>	<b>396</b>
<i>Febri Aldi, Anita Ade Rahma</i>	
<b>OLAP APPROACH IN SEARCHING MANUFACTURING INDUSTRIES IN WEST SUMATERA.....</b>	<b>407</b>
<i>E P W Mandala, D E Putri, D W T Putra, D P Mulya</i>	
<b>TWEETGST: A WEB BASED SYSTEMS FOR SENTIMENT ANALYSIS AND OPINION MINING FOR GST IN MALAYSIA.....</b>	<b>413</b>
<i>Nurul Misyani Mohd Rafie, Kasturi Dewi Varathan, Mohammad Shafenoora Amin</i>	
<b>RADIATION PATTERN RECONFIGURABLE FM ANTENNA.....</b>	<b>419</b>
<i>Jaya Bharath Gopalakrishnan, Thennarasan Sabapathy, Muzammil Jusoh, Samir Al-Bawri, M.N. Yaasin, Mohamed Nasrun Osman, Hasliza Abd Rahim, Mohd Hafizudin Mat, Huda A. Majid, Tarmizi Ali, Yasmin Abdul Wahab</i>	
<b>ANALYSIS OF ELECTRONICALLY RECONFIGURABLE BEAM STEERING ANTENNA ARRAY USING PHASE SHIFTER TECHNIQUE.....</b>	<b>428</b>
<i>Soh Jen Neei, Muzammil Jusoh, Thennarasan Sabapathy, Samir Al-Bawri, Mohd Najib Yaasin, Hasliza Abd Rahim, Tariq Abd Latef, Mahmud A. M. Albreem, Mohamed Nasrun Osman</i>	
<b>EXPERT SYSTEM INSEMINATION .....</b>	<b>437</b>
<i>Yogi Wiyandra, Firna Yenila, Suci Wahyuni, Febrihadi</i>	
<b>MODEL OF ARTIFICIAL NEURAL NETWORKS IN PREDICTIONS OF CORN PRODUCTIVITY IN AN EFFORT TO OVERCOME IMPORTS IN INDONESIA.....</b>	<b>445</b>
<i>Anjar Wanto, Dedy Hartama, Gita Widi Bhawika, Zulifah Chikmawati, Deswidya Sukrisna Hutauruk, Pinondang Hotria Siregar, Ricard Fredrik Marpaung, Salim Efendi, Imeldawaty Gultom, Agus Perdana Windarto</i>	
<b>IMPLEMENTATION AND DESIGN USER INTERFACE LAYOUT USE LEAP MOTION CONTROLLER WITH HAND GESTURE RECOGNITION .....</b>	<b>451</b>
<i>Billy Hendrik, Fauziah, Mardhiah Masril, Yunan Fauzi Wijaya, Silfia Andini</i>	

<b>DESIGNING A MULTIMODAL GRAPH SYSTEM TO SUPPORT NON-VISUAL INTERPRETATION OF GRAPHICAL INFORMATION .....</b>	<b>463</b>
<i>Deni Setiawan, Bagus Priambodo, Mila Desi Anasanti, Al Hamidy Hazidar, Emil Naf'an, Mardhiah Masril, Inge Handriani, Asama Kudr Nseaf, Zico Pratama Putra</i>	

## PART 2

<b>BACKPROPAGATION NEURAL NETWORK PREDICTION FOR CRYPTOCURRENCY BITCOIN PRICES .....</b>	<b>469</b>
<i>Rini Sovia, Musli Yanto, Arif Budiman, Liga Mayola, Dio Saputra</i>	
<b>HYBRID CRYPTOGRAPHY AND STEGANOGRAPHY METHOD TO EMBED ENCRYPTED TEXT MESSAGE WITHIN IMAGE.....</b>	<b>478</b>
<i>Khider Nassif Jassim, Ahmed Khudhur Nsaif, Asama Kuder Nseaf, Al Hamidy Hazidar, Bagus Priambodo, Emil Naf'an, Mardhiah Masril, Inge Handriani, Zico Pratama Putra</i>	
<b>APPLICATION OF FORWARD CHAINING METHOD FOR COGNITIVE AND HUMANISTIC AS AN INDONESIA LANGUAGE .....</b>	<b>487</b>
<i>C Nuraini, A Suharso, Sumiyadi</i>	
<b>ANALYSIS OF THE SUCCESS OF STUDENT MONITORING INFORMATION SYSTEM IMPLEMENTATION USING DELONE AND MCLEAN MODEL .....</b>	<b>493</b>
<i>B K Riasti, A Nugroho</i>	
<b>USING 3D MEDIA TO IMPROVE SHORT STORIES WRITING SKILL ON JUNIOR HIGH SCHOOL STUDENTS .....</b>	<b>497</b>
<i>Khaerunnisa, Mutiarani, Wika Soviana Devi, Andi Irma Sarjani</i>	
<b>ONLINE MEASUREMENT TO ASSESS A PROBLEM SOLVING SKILLS BASED ON MULTIMEDIA INSTRUMENT .....</b>	<b>501</b>
<i>M Ardiyaningrum, T H Retnowati, Jailani, Trisniawati</i>	

### **DEVELOPING A COMPETENCY-BASED OF LANGUAGE SKILLS AND LITERACY ABILITIES IN PRIMARY SCHOOL**

<b>DEVELOPING A COMPETENCY-BASED OF LANGUAGE SKILLS AND LITERARY ABILITIES IN THE PRIMARY SCHOOL .....</b>	<b>506</b>
<i>E Suryanto, Emzir, S Akhadiah</i>	
<b>THE INFLUENCE OF INQUIRY-BASED LEARNING MATERIALS TOWARDS STUDENTS' ACHIEVEMENT.....</b>	<b>511</b>
<i>Hariyanto, Soetarno Joyoatmojo, Joko Nurkamto, Gunarhadi</i>	
<b>EXPLORING THE PRACTICE OF TEACHER-STUDENTS' CLASSROOM INTERACTION IN SPEAKING SUBJECT AT HIGHER EDUCATION.....</b>	<b>517</b>
<i>Ngatmini, Rustono, Subyantoro, Mimi Mulyani</i>	
<b>CHARACTER EDUCATION THROUGH INDONESIAN LANGUAGE COURSE ON HIGHER EDUCATION.....</b>	<b>524</b>
<i>S Rabiah</i>	
<b>ACTIVE LEARNING IN SCIENTIFIC WRITING SKILL USING INDONESIAN TEXTBOOK BASED ON CHARACTER EDUCATION .....</b>	<b>530</b>
<i>St. Y. Slamet, R Winarni, Hartono</i>	
<b>THE FEASIBILITY OF SYNTACTIC TEACHING MATERIALS DEVELOPMENT THROUGH IFDAD MODEL.....</b>	<b>535</b>
<i>D Muhammad Basri, Andi Tenri Ampa</i>	
<b>LEXICAL AND GRAMMATICAL COHESIONS IN THE STUDENTS' ESSAY WRITING AS THE ENGLISH PRODUCTIVE SKILLS .....</b>	<b>540</b>
<i>Andi Tenri Ampa, D Muhammad Basri</i>	
<b>THE RESEPTIVE AND PRODUCTIVE LEARNING MODELS BASED ON FOLKTALES FOR LEARNING INDONESIAN AS A FOREIGN LANGUAGE .....</b>	<b>546</b>
<i>NE Wardani, C Ulya</i>	
<b>QUANTUM LEARNING METHODS TO IMPROVE STUDENTS' SPEECH SKILL USING JAVANESE'S KRAMA ALUS .....</b>	<b>551</b>
<i>K Yuniar, A Rakhmawati, B Setiawan, K Saddhono</i>	
<b>TEACHING LEARNING JAVANESE NEWS WRITING TROUGH GROUP INVESTIGATION METHOD AND ILLUSTRATION MEDIA IN SENIOR HIGH SCHOOL.....</b>	<b>555</b>
<i>ST Pratihita, R Winarni, Sumarwati</i>	

<b>THE USE OF SAMAWA TRIBE SAKECO ART AS A LITERATURE LEARNING MATERIAL IN JUNIOR HIGH SCHOOL .....</b>	<b>560</b>
<i>Sukiman, W A Purwani, Y Pratiwi, N Widiati</i>	

## **EDUCATION AND TECHNOLOGY**

<b>PRACTICALITY OF E-LEARNING AS LEARNING MEDIA IN DIGITAL SIMULATION SUBJECTS AT VOCATIONAL SCHOOL IN PADANG .....</b>	<b>565</b>
<i>Monica Fransisca, Yuliawati Yunus, Aminda Dewi Sutiasih, Renny Permata Saputri</i>	
<b>CONVERGENCE ANALYSIS OF ACCELERATION AND GENERALIZATION OF E-LEARNING IN THE MANIFESTATION OF GLOBALIZATION EDUCATION READINESS 4.0 .....</b>	<b>571</b>
<i>Sitti Rizki Mulyani, Agung Ramadhanu, Desi Permata Sari, Rahmatul Husna Arsyah, Neni Sri Wahyuni Nengsih</i>	
<b>TOWARDS DATA-DRIVEN EDUCATION WITH LEARNING ANALYTICS FOR EDUCATOR 4.0 .....</b>	<b>578</b>
<i>Salimah Mokhtar, Jawad A. Q. Alshboul, Ghassan O. A. Shahin</i>	
<b>LEARNING SATISFACTION ANALYSIS OF ONLINE LEARNING READINESS WITH LEARNING CULTURE AND CHARACTER STRENGTH AS ANTECEDENT VARIABLES .....</b>	<b>585</b>
<i>Agung Ramadhanu, Ramdani Bayu Putra, Hadi Syahputra, Rahmatul Husna Arsyah, Desi Permata Sari</i>	
<b>IMPACT OF LEARNING MOTIVATION, COGNITIVE AND SELF-EFFICACY IN IMPROVING LEARNING QUALITY E-LEARNING IN INDUSTRIAL ERA 4.0.....</b>	<b>596</b>
<i>Ramdani Bayu Putra, Etfiswandi, Muhammad Ridwan, Sitti Rizki Mulyani, Dharma Syahrullah Ekajaya, Rio Andhika Putra</i>	
<b>THE EFFECT OF LEGO MINDSTORMS AS AN INNOVATIVE EDUCATIONAL TOOL TO DEVELOP STUDENTS' CREATIVITY SKILLS FOR A CREATIVE SOCIETY .....</b>	<b>606</b>
<i>Mardhiah Masril, Billy Hendrik, Harry Theozard Fikri, Al Hamidy Hazidar, Bagus Priambodo, Emil Naf'an, Inge Handriani, Zico Pratama Putra, Asama Kudr Nseaf</i>	
<b>EFFECT OF COOPERATIVE LEARNING MODEL TYPE OF TALKING STICK AGAINST STUDENT LEARNING .....</b>	<b>615</b>
<i>Lidia Wijayanti, Imam Sukwatus Sujai, Dian Septi Nur Afifah</i>	
<b>ANALYSIS OF CRITICAL THINKING FROM STUDENT WITH QUANTIVE APPROACH.....</b>	<b>618</b>
<i>Laila Rahmawati, Subanji, Dian Septi Nur Afifah</i>	
<b>STRATEGY TEACHING OF EDUCATION FROM BATIK TECHNIQUE AND HAYAN SABITAH PERSPECTIVE .....</b>	<b>622</b>
<i>A Kairina, N S Lestari</i>	
<b>DIGITAL LIFE SOCIETY EDUCATION FROM PUNAKAWAN HISTORY .....</b>	<b>628</b>
<i>M B Capellita, N S Lestari</i>	
<b>THE EFFORT OF IMPLEMENTING OF THE BIG BOOK AS A MEDIA TO IMPROVE THE INTELLIGENCE OF LINGUISTIC VERBALS FOR EARLY CHILDHOOD.....</b>	<b>634</b>
<i>R Setyorini, K Saddhono, Ermanto, M Wildan, S Kirom</i>	
<b>ANALYSIS OF IMPACT ANDROID-BASED LITERACY LEARNING MEDIA (MPBA) APPLICATION TO THE DEVELOPMENT OF SKILLS IN INTEREST AND LITERACY OF KINDERGARTEN STUDENTS.....</b>	<b>640</b>
<i>Hartatik</i>	
<b>MINIMIZATION OF PALM OIL LOSSES ON STERILIZATION PROCESS BY OPTIMIZATION BOILING PRESSURE AND BOILING TIME.....</b>	<b>645</b>
<i>Wetri Febrina, Yusrizal, Aidil Abrar</i>	
<b>DISASTER RISK MANAGEMENT STRATEGY IN THE ENVIRONMENT AND DISASTER MITIGATION-BASED SCHOOL (SWALIBA).....</b>	<b>651</b>
<i>Sindhung Wardana, Herdis Herdiansyah, Adam Wicaksono</i>	
<b>LANDSLIDE VULNERABILITY IN RESIDENTIAL AREAS FOR DISASTER MITIGATION IN SAWANGAN DISTRICT, DEPOK CITY.....</b>	<b>657</b>
<i>Peni Puspitasari, Herdis Herdiansyah</i>	
<b>THE IMPACT ANALYSIS OF FLOOD DISASTER IN DKI JAKARTA: PREVENTION AND CONTROL PERSPECTIVE .....</b>	<b>662</b>
<i>Adam Wicaksono, Herdis Herdiansyah</i>	

## **INFORMATION TECHNOLOGY**

<b>HOW ONLINE MEDIA AND TECHNOLOGY INNOVATION INFLUENCE CONSUMER'S PURCHASE INTENTION.....</b>	<b>668</b>
<i>Sitti Rizki Mulyani, Marta Widian Sari, Vivi Nila Sari, Larissa Navia Rani, Darma Syahrullah Ekajaya</i>	

<b>EXPLORING INTERACTION'S QUALITY ATTRIBUTES AT MOBILE GOVERNMENT SERVICES .....</b>	<b>673</b>
<i>Abdulla Jaafar Mohamed, Mohd Khalit Bin Othman, Suraya Binti Hamid, Ali Hussein Zolait, Norliya binti Ahmad Kassim</i>	
<b>STARTUP LEARNING PATH (SLP): A LEARNING MODEL FOR STARTUP EMPLOYEES USING AGILE LEARNING APPROACH .....</b>	<b>680</b>
<i>Egi Endeska Putra, Ridi Ferdiana, Rudy Hartanto</i>	
<b>THE UTILIZATION OF LEARNING ANALYTICS TO DEVELOP STUDENT ENGAGEMENT MODEL IN LEARNING MANAGEMENT SYSTEM .....</b>	<b>689</b>
<i>Shahrul Nizam Ismail, Suraya Hamid, Haruna Chiroma</i>	
<b>THE FRAMEWORK ACCOMMODATION OF SYSTEMS RECOMMENDATION VIA SOCIAL MEDIA .....</b>	<b>698</b>
<i>Doni Ariyanto, Lukito Edi Nugroho, Adhistya Erna Permatasari</i>	
<b>THE IMPACT OF AGE, GENDER, AND EDUCATIONAL LEVEL ON THE CYBERSECURITY BEHAVIORS OF TERTIARY INSTITUTION STUDENTS: AN EMPIRICAL INVESTIGATION ON MALAYSIAN UNIVERSITIES .....</b>	<b>707</b>
<i>F B Fatokun, S Hamid, A Norman, J O Fatokun</i>	
<b>DESIGNING ENGINEERING DATA MANAGEMENT SYSTEM IN RESEARCH AND DEVELOPMENT COMPANY .....</b>	<b>720</b>
<i>Muhammad Nur, Luciana Andrawina</i>	
<b>DIGITAL MEDICAL DATA PROTECTION COMPLIANCE AMONG MEDICAL STAFFS .....</b>	<b>727</b>
<i>Uning Pratimaratri, Desi Ilona, Zaitul</i>	
<b>TECHNOLOGY CONTEXT AND SOCIAL MEDIA ADOPTION AMONG SMALL AND MEDIUM ENTERPRISES.....</b>	<b>734</b>
<i>Desi Ilona, Zerni Melmusi, Hanna Pratiwi, Zaitul</i>	
<b>DESIGNING LECTORA BASED INTERACTIVE CD LEARNING MEDIA IN BASIC PROGRAMMING SUBJECTS (CASE STUDY OF CLASS X SMKN 2 PADANG).....</b>	<b>741</b>
<i>Indra Wijaya, Rini Sefriani, Menrisal, Popi Radyuli, Lili Andrayani</i>	
<b>A COMPARATIVE REVIEW OF ISMS IMPLEMENTATION BASED ON ISO 27000 SERIES IN ORGANIZATIONS OF DIFFERENT BUSINESS SECTORS .....</b>	<b>751</b>
<i>Zaidatulnaja Hamdi, Azah Anir Norman, Nurul Nuha Abdul Molok, Farkhondeh Hassandoust</i>	
<b>KNOWLEDGE MANAGEMENT OF PERFORMANCE ANALYSIS AND QUALITY SERVICE FROM REGIONAL PUBLIC HEALTH PARIAMAN.....</b>	<b>759</b>
<i>Vicky Brama Kumbara, Fitri Yeni, Rio Andika Putra, Dori Mittra Candana, Robby Dharna</i>	
<b>THE UNDERSTANDING OF LECTURERS ABOUT THE NEW LITERACY IN INDUSTRIAL REVOLUTION ERA 4.0: A STUDY CASE OF UNIVERSITY OF PUTRA INDONESIA YPTK PADANG .....</b>	<b>766</b>
<i>Muharika Dewi, Yulia Retno Sari, Shally Amna, Rasmita, Rina Susanti</i>	
<b>STANDARD OPERATIONAL PROCEDURE FUND DISTRIBUTION SYSTEM OF ZAKAT INFAQ AND SHODAQOH FOR ZAKAT FOUNDATIONS .....</b>	<b>773</b>
<i>Inge Handriani, Bagus Priambodo, Al Hamidy Hazidar, Mardhiyah Masril, Zico Pratama Putra, Asama Kudr Nseaf, Emil Naf'an</i>	
<b>ANALYSIS SYSTEM OCCUPATIONAL HEALTH AND SAFETY IN COAL UNDERGROUND .....</b>	<b>779</b>
<i>H Prabowo, I Prengki, A Amran</i>	
<b>LEARNING VOCABULARIES USING MULTIMEDIA-BASED TEACHING INDONESIAN TO SPEAKERS OF OTHER LANGUAGES (TISOL).....</b>	<b>784</b>
<i>K Saddhono, Suhartatik, Bagiya, Widodo, H Wahyono</i>	
<b>WAYANG BEBER ANIMATION MEDIA AS AN EFFORT FOR PRESERVING WAYANG TRADITION BASED ON INFORMATION AND TECHNOLOGY.....</b>	<b>789</b>
<i>B H Prilosadoso, B Pujiono, S Supeni, B W Setyawan</i>	
<b>THE DEVELOPMENT OF STUDENTS' APTITUDE TEST IN ONLINE AND MULTIMEDIA BASED INTERESTS GROUP SELECTION .....</b>	<b>794</b>
<i>F Wulandari, D Mardapi, Haryanto</i>	
<b>TEACHER COMPETENCE IN UTILIZING DIGITAL MEDIA LITERACY IN EDUCATION.....</b>	<b>799</b>
<i>S Ramadhan, E Sukma, V Indriyani</i>	
<b>THE USE OF LEARNING MEDIA ON THE SPEAKING SUBJECT OF ISLAMIC HIGHER EDUCATIONS IN THE ENTIRE CENTRAL JAVA AND YOGYAKARTA.....</b>	<b>804</b>
<i>Umi Faizah, Sarwiji Suwandi, Andayani, A Rahmawati</i>	
<b>UTILIZING DIGITAL MEDIA FOR EMBEDDING LOCAL CULTURAL VALUES: VOCATIONAL HIGH SCHOOLS CONTEXT .....</b>	<b>809</b>
<i>Hersulastuti, D B P Setiyadi, Dodi Mulyadi, Rangga Asmara, Widya Ratna Kusumaningrum</i>	



<b>GAMELAN AS A LEARNING MEDIA SPEAKING SKILLS TO INDONESIAN LANGUAGE STUDENTS FOR FOREIGN SPEAKERS (BIPA).....</b>	<b>815</b>
<i>A Riyanti, D Zuchdi, Nurhadi</i>	
<b>MEDIA DEVELOPMENT ON THE CONCEPT SENTENCE LEARNING MODEL BASED ANDROID FOR STUDENTS WITH HEARING IMPAIRMENT .....</b>	<b>820</b>
<i>I P Mirasandi, M Akhyar, H Widyastono</i>	
<b>STUDENTS' PERCEPTIONS OF BLENDED LEARNING IN MASTERING ENGLISH FOR SPECIFIC PURPOSES .....</b>	<b>825</b>
<i>D Mulyadi, Hersulastuti, Y Purnama</i>	
<b>ENTRY APPLICATION SOFTWARE TO IDENTIFY THE DEVELOPMENT OF READING AND WRITING VOCABULARY .....</b>	<b>831</b>
<i>F Inayatillah, Kisyani, Mintowati, Mukhzamilah</i>	
<b>VIDEO AS EDUCATIONAL MULTIMEDIA TO TEACH ENGLISH SPEAKING .....</b>	<b>837</b>
<i>Novia Fajar Masyitoh, Noor Malihah, Faizal Risdianto, Agung Guritno</i>	
<b>ANIMATION – BASED LEGENDARY STORIES MATERIALS FROM BANJARNEGARA TO TEACH JAVANESE IN JUNIOR HIGH SCHOOL .....</b>	<b>840</b>
<i>H Erwinsyah, Andayani, Sumarwati</i>	
<b>MULTIMEDIA-BASED ONLINE TEST ON INDONESIAN LANGUAGE RECEPTIVE SKILLS DEVELOPMENT .....</b>	<b>845</b>
<i>M Sudaryanto, D Mardapi, S Hadi</i>	
<b>ADIWIYATA INSIGHT: INFORMATION TECHNOLOGY BASED ENVIRONMENTAL EDUCATION AT SENIOR HIGH SCHOOL IN BOYOLALI, CENTRAL JAVA .....</b>	<b>852</b>
<i>K Saddhono, M Rohmadi, A A Rondiyah, Y Purwiyanti, R Suhita, M Sudaryanto, A Anindyarini, M R Romadlon, A Sudigdo, W E Purwanto</i>	
<b>AN ALTERNATIVE STRATEGY FOR INCREASING INDONESIAN STUDENT DIGITAL LITERACY SKILLS THROUGH INTERACTIVE GAME .....</b>	<b>858</b>
<i>R Rakimahwati, Z Ardi</i>	
<b>ANDROID "KARIRKU" SOFTWARE DEVELOPMENT FOR EXPLORATION OF CAREER TRENDS BASED ON PERSONALITY TYPES.....</b>	<b>865</b>
<i>Z Ardi, RD Febriani, I Ifdil, A Afdal</i>	
<b>DEVELOPMENT AND VALIDATION OF ACCEPTABILITY OF MENTAL-HEALTH MOBILE APP SURVEY (AMMS) FOR ANDROID-BASED ONLINE COUNSELING SERVICE ASSESSMENT .....</b>	<b>872</b>
<i>I Sukmawati, Z Ardi, I Ifdil, Z Zikra</i>	

## **MATHEMATIC & STATISTIC**

<b>STATISTICAL SOFTWARE ADOPTION BEHAVIOUR AMONG INDONESIA'S UNDERGRADUATE STUDENTS.....</b>	<b>879</b>
<i>Zaitul, Sitti Rizki Mulyani, Muhammad Ridwan, Desi Ilona</i>	
<b>BEHAVIOURAL INTENTION TO USE MYOB ACCOUNTING APPLICATION AMONG ACCOUNTING STUDENTS.....</b>	<b>888</b>
<i>Dwi Fitri Puspa, Desi Ilona, Zaitul</i>	
<b>STUDENT'S COGNITIVE CONFLICT FORM PROBLEM SOLVING ON MATHEMATICS .....</b>	<b>896</b>
<i>Halimah, Subanji, Dian Septi Nur Afifah</i>	
<b>TWO DIMENSIONAL OBJECT IN SQUARE AND RECTANGLES: BATIK ARTWORK APPROACH.....</b>	<b>901</b>
<i>Mika Ambarawati, Ririn Dwi Agustin</i>	
<b>DEVELOPMENT OF E-LEARNING MATHEMATICS ENCYCLOPEDIA AS LEARNING TOOLS FOR CLASS VIII JUNIOR HIGH SCHOOL.....</b>	<b>909</b>
<i>Ririn Dwi Agustin, Mika Ambarawati</i>	
<b>STATISTIC PROBLEM SOLVING BASED ON COGNITIVE STYLE: STATISTICALLY THINKING .....</b>	<b>914</b>
<i>U N Qomariyah, D Juniati, T Y E Siswono</i>	
<b>LINEAR REGRESSION STATISTIC FROM ACCOUNTING INFORMATION SYSTEM APPLICATION FOR EMPLOYEE INTEGRITY .....</b>	<b>921</b>
<i>L Y Syah, S N Nafsiah, K Saddhono</i>	
<b>STUDENTS' PROBLEM-SOLVING ABILITY IN TEMPERATURE AND HEAT CONCEPTS.....</b>	<b>928</b>
<i>M. R. A. Taqwa, R. Faizah, L. Rivaldo, D. E. Safitri, F. N. Aini, M. I. Sodiqin</i>	

<b>THE EFFECTIVENESS OF MATHEMATIC LEARNING MATERIALS BASED ON CONTEXTUAL TEACHING AND LEARNING.....</b>	<b>932</b>
<i>Mohammad Anang Taufik, Mulyoto, Sunardi, Nunuk Suryani</i>	
<b>Author Index</b>	